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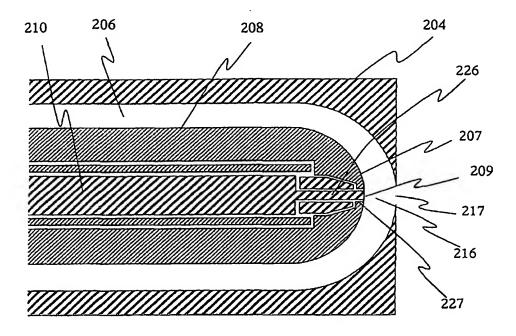
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Declarations under Rule 4.17:

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- of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: FAIMS APPARATUS AND METHOD WITH ION DIVERTING DEVICE



THIODITO

(57) Abstract: A method and apparatus for selectively transmitting ions using a FAIMS analyzer is disclosed. An ion diverter is included within the FAIMS analyzer for afffecting the trajectories of ions after separation to direct the ions in a known fashion. The ion diverter is optionally a gas flow source or an electrode for generating an electrical field to alter ion flow.

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INTERNATIONAL SEARCH REPORT

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A. CLASSII IPC 7	FICATION OF SUBJECT MATTER H01J49/04 G01N27/64 H01J49/4	2				
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C. DOCUM	ENTS CONSIDERED TO BE RELEVANT					
Category *	Citation of document, with indication, where appropriate, of the rele	vant passages	Relevant to daim No.			
	CHEVERMONT D ET AL HATMOCHHERIC	DDECCUDE	1 12			
Α	GUEVREMONT R ET AL: "ATMOSPHERIC ION FOCUSING IN A HIGH-FIELD ASYM	METRIC	1,13			
	WAVEFORM ION MOBILITY SPECTROMETE	R"				
	REVIEW OF SCIENTIFIC INSTRUMENTS,					
	INSTITUTE OF PHYSICS. NEW YORK, U vol. 70, no. 2, February 1999 (19	s, 99-02).				
	pages 1370-1383, XP000875375	33 02),				
<u> </u>	ISSN: 0034-6748					
	page 1378; figure 13					
Α	US 5 420 424 A (CARNAHAN BYRON L	ET AL)	1,13			
	30 May 1995 (1995-05-30)					
	cited in the application abstract; figure 1					
	-	/				
X Furt	her documents are listed in the continuation of box C.	Patent family members are listed	In annex.			
		"T" later document published after the into	emational filing date			
'A' docume	ent defining the general state of the art which is not dered to be of particular relevance	or priority date and not in conflict with cited to understand the principle or th invention	eory underlying the			
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later t	*P* document published prior to the international fiting date but later than the priority date claimed in the art. *& document member of the same patent family					
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2	27 June 2002	04/07/2002				
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INTERNATIONAL SEARCH REPORT

PCT/CA 01/00309

		PC1/CA 01/00309	
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	Relevant to claim No.	
Category *	Citation of document, with indication, where appropriate, of the relevant passages	reevan to dam no.	
A	CARNAHAM B ET AL: "FIELD ION SPECTROMETRY - A NEW ANALYTICAL TECHNOLOGY FOR TRACE GAS ANALYSIS" PROCEEDINGS OF THE ANNUAL ISA ANALYSIS DIVISION SYMPOSIUM, XX, XX, no. 29, April 1996 (1996-04), pages 65-94, XP000863733 page 89	1,13	
A	PURVES R W ET AL: "MASS SPECTROMETRIC CHARACTERIZATION OF A HIGH-FIELD ASYMMETRIC WAVEFORM ION MOBILITY SPECTROMETER" REVIEW OF SCIENTIFIC INSTRUMENTS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 69, no. 12, December 1998 (1998-12), pages 4094-4105, XP000918121 ISSN: 0034-6748 cited in the application	1,13	
	abstract; figures 2,3		

INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/CA 01/00309

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5420424	A	30-05-1995	CA	2148166 A1	30-10-1995
			DE	69524282 D1	17-01-2002
			EP	0679886 A1	02-11-1995
			FI	951910 A	30-10-1995
			IL	113468 A	20-11-1997
			JP	8054373 A	27-02-1996

Form PCT/ISA/210 (patent family annex) (July 1992)

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